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Dedicated to protecting and improving the health and environment of the people of Colorado

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of Public Health
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February 7, 2000

Joseph Legare
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Re: comments address the Draft Final Technical Memorandum on Monitored Natural Attenuation of the PU&D Yard VOC Plume

Dear Mr. Legare:

The EPA does not have comments on this document and suggested we send our comments directly. This document contains a bare minimum of information with which to make any decision on this plume. Analysis is up to the reader, who must have several other data summaries on this project to make sense of it.

Section 2.4 contains a sentence that epitomizes the problem with this document. "The distribution of individual PU&D Yard contaminants of concern is more complex than depicted by the composite plume map." In order to consider Monitored Natural Attenuation (MNA) the site must be able to explain to the regulators the pathways and attenuation mechanisms of transport. The source(s) need to be understood as well as possible. Mapping of the individual plume contaminants is complicated but necessary to this explanation. There appear to be at least 3 sources contributing to this plume.

It would appear there is a pathway through the slurry wall between B206589 and 7287 and that flow is out of the landfill rather than the possibility mentioned that a small fraction of groundwater breaches the intercept and diversion system and enters the land fill. What flow and quality measurements are made at SW097 that would indicate the latter?

Why is information obtained from the IHSS investigation not included in this report? A grab sample of water from borehole 17497 appears to have the highest concentrations of

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PCE in the area at 1700 ug/l. Detection levels for the other PU&D Yard contaminants in this sample were greater than 250 ug/l and so it is not possible to tell if this is actually the main source of the PU&D Yard plume (containing TCA). Why was this boring not completed as a well?

At the bottom of page 11 it is stated that "Because multiple sources may contribute to composite plume shape and extent, these parameters cannot be used to provide reliable indicators of plume migration rate away from the PU&D Yard area." It is not clear which parameters this statement refers to. A thoughtful examination of the concentration data with knowledge of the groundwater flow directions should give a pretty good picture of the source areas and migration direction. A check of the seasonal ground water flow directions and detailed evaluation of the potentiometric surface map may be necessary to ensure a good evaluation.

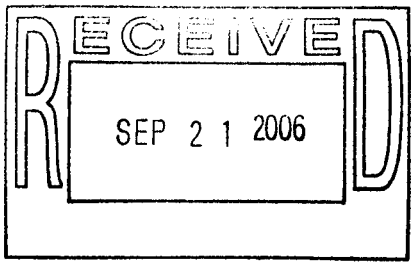
Section 2.5 suggests several attenuation processes may apply to this plume, therefore determination of a specific mechanism of attenuation is not critical. If a reasonable conceptual model can not be developed for this plume then it should not be considered for MNA. An MNA remedy presumes enough analysis and monitoring will be done to understand that the plume will never impact a receptor.

Well 7287 shows increasing contaminant trends, possibly from within the land fill. It is not clear from the available data if the PU&D plume reaches this area or if there is a change in ground water flow direction and contaminant movement.

The conclusion that the plume should be monitored in selected wells and drain outfalls at and beyond the leading edge of the plume is good except that the leading edge of the plume is not well defined by this Technical Memorandum. After an appropriate analysis is made, a conceptual model defined, and data gaps identified and resolved, then it will be appropriate to select long-term monitoring locations.

The hydrogeologic factors that are important in attenuating this plume should be defined and quantified to the extent possible to develop a conceptual model that explains and estimates the lifetime of these plumes.

The apparent transport of the PU&D yard contaminants in the landfill ground water intercept system means that management of one impacts the other. It should be determined if there is a breach in the slurry wall and if so, which way the ground water is flowing. Management of this edge of the plume should be linked to decisions on landfill management.



If you have questions about these comments please contact Elizabeth Pottorff at 303-692-3429 or Carl Spreng at 303-692-3358.

Sincerely,

Steven H. Gunderson
CDPHE RFCA Project Coordinator

cc: Norma Castañeda, DOE
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